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ABSTRACT

Despite increased interest in real life problem solving with both children and adults, the question of whether problem solving is related to psychological adjustment remains unanswered. To examine whether college students' self-appraisal of their problem solving skills is related to their psychological adjustment, 671 students took the Problem Solving Inventory during a mass testing program at the beginning of the semester. Subsequently, 80 subjects were selected for additional participation; 67 of those subjects completed the study by responding to the Minnesota Multiphasic Personality Inventory (MMPI). The data were analyzed on a scale by scale basis, as well as through profile analyses by two psychologists skilled in the interpretation of MMPI profiles. Results revealed that self-appraised ineffective (as opposed to effective) problem solvers scored more negatively on a general index of psychological adjustment (the sum of all the clinical scales), differed on all of the hypothesized validity and clinical scales, and differed on all of the hypothesized additional scales. In addition, the profile analyses by the two psychologists suggested that the self-appraised ineffective problem solvers were less well adjusted psychologically than the self-appraised effective problem solvers, thus supporting the findings from the scale by scale analyses. The findings suggest that whereas behavioral adjustment was previously linked to the ability to cope with problematic situations, perhaps an equally important variable is the person's appraisal of his/her coping ability. (Author/JAC)

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The Relationship between Problem Solving Self-Appraisal and Psychological Adjustment

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Abstract

This study examined whether college students' self-appraisal of their problem-solving effectiveness is related to their psychological adjustment, as measured by the Minnesota Multiphasic Personality Inventory (MMPI). Subjects (N = 671) were initially given the Problem Solving Inventory (PSI: Heppner & Petersen, 1982) during a mass testing program at the beginning of the semester. Subsequently, 80 subjects were selected for additional participation, of which sixty-seven (81% of the random sample) completed the study by responding to the MMPI. The data were analyzed on a scale by scale basis, as well as through profile analyses by two psychologists skilled in the interpretation of MMPI profiles. Results revealed that self-appraised ineffective (as opposed to effective) problem solvers scored more negatively on a general index of psychological adjustment (the sum of all the clinical scales), differed on all of the hypothesized validity and clinical scales (F, K, F minus K, D, Pt, and Sc) as well as differed on all of the hypothesized additional scales (A, Es, Dy, Do, Re, Pr, St, Es minus A, and Do minus Dy). In addition, the profile analyses by the two psychologists suggested that the self-appraised ineffective problem solvers were less well adjusted psychologically than the self-appraised effective problem solvers, thus supporting the findings from the scale by scale analyses. Whereas behavioral adjustment was previously linked to the ability to cope with problematic situations (Platt & Siegal, 1976), perhaps an equally important variable is the person's appraisal of his/her coping ability.

The Relationship Between Problem Solving Self-Appraisal and Psychological Adjustment

Assisting clients in coping with and solving personal problems is central to psychotherapy (Mahoney, 1974). Within the last ten years there has been increased attention on real life applied problem solving with both children (Krasner & Rubin, 1981; Urbain & Kendall, 1980) and adults (D'Zurilla & Nezu, 1982). Yet after reviewing much of the problem solving literature, Horan (1979) concluded that investigators have not developed a technology for helping clients in the problem-solving and decision-making process. Moreover, there is a paucity of data describing what people actually do as they cope with their everyday difficulties (Coyne, Aldwin, & Lazarus, 1981; Heppner, Hibel, Neal, Weinstein, & Rabinowitz, 1982).

A central and yet unanswered question is whether problem solving is related to psychological adjustment. During the 1970's several studies supported a relationship between problem solving and psychopathology (Appel & Kaestner, 1979; Gotlib & Asarnow, 1979; Intagliata, 1978; Platt, Scura, & Hannon, 1973; Platt & Siegel, 1976; Platt & Spivack, 1972a, 1972b, 1973; Platt, Spivack, Altman, Altman, & Peizer, 1974). Most of these investigations used the Means-Ends Problem Solving procedure (MEPS: Platt & Spivack, 1975) in demonstrating that such means-ends problem solving cognition is an adaptive thinking ability that can successfully discriminate between various adjusted and maladjusted groups. Recently, however, the validity of the MEPS as a measure of real life problem solving ability has been seriously questioned with regard to both theoretical and measurement issues (see Butler & Meichenbaum, 1981; D'Zurilla & Nezu, 1982). In addition, most of the studies have focused on severely disturbed, hospitalized populations, and thus the generalizability of the findings to less disturbed individuals is questionable (D'Zurilla & Nezu, 1982). After reviewing the evidence, D'Zurilla and Nezu (1982) concluded that while several studies seem to support the relationship between problem solving and psychological adjustment, the

findings cannot be considered firm evidence for this conceptualization.

Recently, several investigators have become interested in the manner in which one appraises one's abilities (e.g., Antonovsky, 1979; Bandura, 1982; Butler & Meichenbaum, 1981). Subsequently, problem-solving research has also examined self-appraisal variables as they relate to the applied problem-solving process. For example, Butler and Meichenbaum (1981) hypothesized that appraisal of one's problem solving skills will affect one's problem-solving performance; subsequent research seems to support such a hypothesis (e.g., Heppner, Hibel, et al., 1982; Heppner & Petersen, 1982). For example, college students who perceive themselves to be ineffective (as compared to effective) problem solvers report having more personal problems (Heppner, Hibel, et al., 1982), and report more severe levels of short- and long-term depression (Heppner, Baumgardner, & Jackson, 1982). In essence, the issue is: does the appraisal of one's problem solving skills (which may or may not be accurate) relate to indices of psychological adjustment. In the laboratory, perceptions of controllability have been shown to affect subjects' coping responses, such as stress levels (Geer, Davison, & Gatchel, 1970) and learned helplessness responses (Abramson, Seligman, & Teasdale, 1978); it is unknown, however, if one's problem-solving appraisal based on countless real life performances is related to a general measure of psychological adjustment.

The purpose of this study was to examine whether college students' self-appraisal of their problem-solving skills is related to their psychological adjustment, as measured by a widely used objective personality test, the Minnesota Multiphasic Personality Inventory (MMPI). Based on the authors' clinical experience with the MMPI and the problem-solving literature, it was reasoned that the MMPI responses of the self-appraised ineffective (as opposed to effective) problem solvers would differ substantially in a number of ways. For example, the responses of the self-appraised ineffective problem solvers would suggest they were more dependent and incapable of

dealing with their everyday problems, experiencing more psychological stress, more dissatisfied with life, more worrisome and obsessive, experiencing more faulty coping mechanisms resulting in confusion and misperceptions, less likely to bounce back from problems without being debilitated, more likely to rely on others, and more readily ask for help, be less tolerant of others who are different from themselves, and more rigid in their thinking.

Subsequently, the following hypotheses were established with regard to the validity, clinical, and additional scales. On the validity scales, the self-appraised ineffective (as opposed to effective) problem solvers would score higher on the Frequency (F) scale, lower on the Correction (K) scale, and higher on the F minus K combination. On the clinical scales, the ineffective problem solvers would score higher on the Depression (D), Psychasthenia (Pt), and Schizophrenia (Sc) scales, as well as higher on the total of all eight clinical scales, a score which is often considered a general index of psychological adjustment (Megargee, 1979). On the additional scales, the ineffective problem solvers would score lower on the Ego Strength (Es), Dominance (Do), Social Responsibility (Re), and Status (St) scales, and higher on the Conscious Anxiety (A), Dependence (Dy), and Prejudice (Pr) scales. In addition, the ineffective problem solvers would have (a) lower Do minus Dy scores, an index of the person's felt capacity to control his or her life, and (b) lower Es minus A scores, an index of the person's feeling that he or she is resilient and able to recover from most setbacks (Duckworth, 1979). In short, it was hypothesized that self-appraised ineffective (as opposed to effective) problem solvers would differ on several general indices of psychological adjustment as well as several specific psychological adjustment scales (e.g., depression, dependence).

In the past, research utilizing the MMPI has been criticized for only examining scale scores apart from profile analyses (Butcher & Tellegen, 1978); a more accurate picture may be obtained if both linear and configural code analyses are utilized. Subsequently, the relationship between psychological adjustment and self-appraised

problem-solving effectiveness was further tested by having two judges rate the level of psychological adjustment reflected in the entire MMPI profile. It was predicted that judges' psychological adjustment ratings would be related to the subjects' self-appraised effective or ineffective problem-solving rating.

Method

Subjects

Subjects were students enrolled in introductory psychology classes at a large midwestern university. A total of 671 students initially completed the Problem Solving Inventory (PSI: Heppner & Petersen, 1982) as part of the mass testing program at the beginning of the Fall Semester, 1982. From this group, 20 males and 20 females were randomly selected for further participation from the bottom 16% of PSI scores (those who perceived themselves as confident problem solvers, had personal control and approached problems) and 20 males and 20 females randomly selected from the top 16% (those who perceived themselves as avoiding problems, and lacking both problem-solving confidence and personal control). From this random sample, 17 males and 16 females of the top PSI scorers and 14 males and 20 females of the bottom PSI scorers actually completed the experiment by participating at the arranged time (81% of the random sample). The PSI scores for the two groups were as follows: highest scorers, $\underline{M}$ = 117.2, SD = 7.2; lowest scorers, $\underline{M}$ = 60.0, SD = 7.7. These subjects (N = 67) had a mean age of 18.7, were primarily freshmen, white, and unmarried. They were only told that the study investigated people's "personality styles," and that they would be asked to complete one questionnaire. All subjects received 2 hours of research credit for their participation.

Instruments

The Problem Solving Inventory (PSI: Heppner & Petersen, 1982) consists of 32 six-point Likert items which assess people's perceptions of their personal problem-solving behaviors and attitudes. An earlier factor analysis (Heppner & Petersen, 1982) revealed three distinct constructs: problem-solving confidence (11 items),

approach-avoidance style (16 items), and personal control (5 items). Low scores indicate perceptions of problem-solving confidence, personal control, and a tendency to approach personal problems; the PSI is a self-rating questionnaire, and scores should not be considered synonymous with level of actual problem-solving skills (Heppner, 1982). Reliability estimates revealed that the constructs were internally consistent (.72 to .90; N = 150) and stable over time (.83 to .89; N = 31). Validity estimates are provided in several investigations (e.g., Heppner, Baumgardner, et al., 1982; Heppner, Hibel, et al., 1982; Heppner & Krieshok, in press; Heppner & Petersen, 1982; Heppner, Reeder, & Larson, 1982). For example, estimates of validity suggest that the instrument is measuring constructs which are: (a) related to general self-perceptions of problem-solving skills (Heppner & Petersen, 1982); (b) related to personality variables, most notably an internal locus of control (Heppner & Petersen, 1982); (c) related to the number of personal problems acknowledged on the Mooney Problem Checklist (Heppner, Hibel, et al., 1982); (d) related to a number of expectations, intervention strategies, attitudes and behaviors within the problem-solving process (Heppner, Hibel, et al., 1982); (e) related to severity of short- and long-term depression (Heppner, Baumgardner, et al., 1982); (f) unrelated to conceptualizing the means to solve a hypothetical problem situation (Heppner & Petersen, 1982); and (g) unrelated to intelligence or social desirability (DeClue, 1983; Heppner & Petersen, 1982). Interviewers have also correctly identified 83% of the subjects as either high or low scorers on the PSI after a one hour interview (Heppner, Hibel, et. al., 1982).

The Minnesota Multiphasic Personality Inventory (MMPI: Dahlstrom & Dahlstrom, 1980; Dahlstrom, Welsh, & Dahlstrom, 1972, 1975; Welsh & Dahlstrom, 1956) is a structured test that consists of 550 true-false questions that cover psychiatric, psychological, neurological and physical symptoms. The MMPI is widely used, and has a number of estimates of validity and reliability (Buros, 1978; Dahlstrom & Welsh, 1960; Dahlstrom, Welsh, & Dahlstrom, 1972, 1975; Welsh & Dahlstrom, 1956).

Procedure

Subjects (N = 671) were initially given the PSI during the mass testing program at the beginning of the semester. Subsequently, 80 subjects were selected for additional participation. These subjects were contacted, meeting times were arranged, and the MMPI was administered.

The MMPI's were scored and profiles were made for each subject. The relationship between psychological adjustment and self-appraised problem-solving effectiveness was further tested by having two Ph.D. psychologists, who were skilled in interpreting MMPI profiles, rate the level of psychological adjustment reflected in the entire MMPI profile (validity, clinical, and additional scales). Both psycholotists were kept blind as to the PSI score of each subject, and were asked to categorize the profiles as indicative of adjustment or maladjustment.

Results

For the validity and clinical scales, raw scores were K corrected and transformed to standard scores; the scores for the additional scales were not K corrected but were transformed to standard scores. The means and standard deviations by PSI and Sex for the validity, clinical, and additional scales of the MMPI are presented in Table 1.

Insert Table 1 about here

Validity Scales

A 2 (PSI: low versus high) X 2 (Sex: male versus female) multivariate analysis of variance (MANOVA) was conducted on the four validity scales of the MMPI: Unanswered Questions, Lie (L), Frequency (F), and Correction (K). Results revealed a statistically significant main effect for the PSI [F (4, 60) = 3.64; $p < .01$] as well as a PSI X Sex interaction [F (4, 60) = 2.69, $p < .05$]. The individual ANOVAs suggest that subjects who had low (as opposed to high) PSI scores had statistically lower F scores [F (1, 66) = 12.15, $p < .001$] and higher K scores [F (1, 66) = 5.14, $p < .05$]. In addition, males who scored low on the PSI and females who scored high on the PSI had

higher L scores than males who had high PSI scores and females who had low PSI scores [F (1, 66) = 7.08, $p < .01$]. The Sex MANOVA main effect was not statistically significant [F (4, 60) = 0.67, $p > .05$].

A 2 (PSI: low versus high) X 2 (Sex: male versus female) analysis of variance (ANOVA) was conducted of the F minus K raw scores. Results revealed only one statistically significant finding; the subjects who had low (as opposed to high) PSI scores had statistically lower F minus D scores [F (1, 66) = 11.01, $p < .002$].

Clinical Scales

A 2 (PSI: low versus high) X 2 (Sex: male versus female) MANOVA was conducted on the eight clinical scales as well as the Masculinity-femininity (Mf) and Social introversion (Si) scales. Results revealed a statistically significant PSI main effect [F (10, 54) = 3.97, $p < .001$] as well as a Sex main effect [F (10, 54) = 3.85, $p < .001$]. The individual ANOVAs suggest that subjects who had low (as opposed to high) PSI scores had statistically lower Depression (D) scores [F (1, 66) = 17.55, $p < .0001$], lower Schizophrenia (Sc) scores [F (1, 66) = 11.67, $p < .001$], lower Psychasthenia (Pt) scores [F (1, 66) = 19.76, $p < .0001$], and lower Social introversion (Si) scores [F (1, 66) = 27.50, $p < .0001$]. In addition, female subjects (as opposed to males) had lower D scores [F (1, 66) = 7.44, $p < .01$] and lower Mf scores [F (1, 66) = 37.06, $p < .0001$]. There was not a statistically significant overall PSI X Sex MANOVA interaction [F (10, 54) = 1.14, $p > .05$].

A 2 (PSI: low versus high) X 2 (Sex: male versus female) ANOVA was conducted on sum of the 8 clinical scales. Results revealed only one statistically significant finding; subjects who scored low (as opposed to high) on the PSI had lower sums [F (1, 66) = 7.47, $p < .01$].

Additional Scales

A 2 (PSI: low versus high) X 2 (Sex: male versus female) MANOVA was also conducted on 9 of the new scales: Conscious Anxiety (A), Conscious Repression (R), Ego

Strength (Es), Dependence (Dy), Dominance (Do), Social responsibility (Re), Prejudice (Pr), Status (St), and Control (Cn).[2] Results revealed a statistically significant PSI main effect [F (9, 55) = 4.65, $p < .0001$]. The individual ANOVAs suggest that subjects with low PSI scores (as opposed to high PSI scores) had lower A scores [F (1, 66) = 22.95, $p < .0001$], higher Es scores [F (1, 66) = 4.73, $p < .05$], lower Dy scores [F (1, 66) = 24.02, $p < .0001$], higher Do scores [F (1, 66) = 22.24, $p < .0001$], higher Re scores [F (1, 66) = 8.24, $p < .005$], lower Pr scores [F (1, 66) = 7.66, $p < .01$], and higher St scores [F (1, 66) = 18.08, $p < .001$]. Results also revealed a statistically significant Sex MANOVA main effect [F (9, 55) = 4.28, $p < .001$]. Individual ANOVAs revealed males (as opposed to females) had higher R scores [F (1, 66) = 9.77, $p < .01$], and higher Re scores [F (1, 66) = 4.14, $p < .05$]. Results also revealed a statistically significant overall PSI X Sex MANOVA interaction [F (9, 55) = 2.60, $p < .05$]; in particular, males who scored high on the PSI had higher Dy scores than the other three groups of subjects [F (1, 66) = 4.35, $p < .05$].

A 2 (PSI: low versus high) X 2 (Sex: male versus female) ANOVA was conducted on the Es minus A scores. Results revealed one statistically significant finding; subjects who had low (as opposed to high) PSI scores had higher Es minus A scores [F (1, 66) = 14.41, $p < .0003$]. Another 2 (PSI: low versus high) X 2 (Sex: male versus female) ANOVA was conducted on the Do minus Dy scores. The results again revealed only one statistically significant finding: subjects who had low (as opposed to high) PSI scores had higher Do minus Dy scores [F (1, 66) = 29.20, $p < .0001$].

Profile Analysis

The first consultant sorted the profiles on the basis of the psychological adjustment of the subject. He identified 76% of the perceived effective problem solvers as psychologically adjusted and 59% of the self-perceived ineffective problem solvers as psychologically maladjusted, which was an average correspondence of 67% between the two categories. A chi-square goodness of fit revealed that this was a statistically

significant proportion of overlap [x^2 (1) = 4.03, $p < .05$]. The second consultant sorted the profiles on the same basis; he identified 70% of the perceived effective problem solvers as psychologically adjusted, 65% of the perceived ineffective problem solvers as psychologically maladjusted, which also was an average correspondence of 67% between the two categories. Another Chi-square goodness of fit revealed that this was a statistically significant proportion of overlap [x^2 (1) = 4.93, $p < .05$].

Discussion

The results suggest that how one appraises his/her problem-solving ability based on countless real-life problem-solving performances is related in a number of ways to psychological adjustment as measured by the MMPI. Specifically, self-appraised ineffective (as opposed to effective) problem solvers differed on a general index of psychological adjustment (e.g., the sum of the clinical scales; Megargee, 1979), on all of the hypothesized validity and clinical scales (F, K, F minus K, D, Pt, Sc), and on all of the hypothesized additional scales (e.g., Es, Do). These results extend the analogue findings which found relationships between perceived controllability and maladaptive coping responses (Abramson et al., 1978; Geer et al., 1970). Moreover, the results are consistent with an emerging body of data which is suggesting that the appraisal of one's abilities not only mediates performance (Bandura, 1982), but also affects physical and psychological reactions to stressful events (Antonovsky, 1979; Kobasa, 1982; Kobasa, Maddi, & Kahn, 1982). The specific results of this study will initially be discussed on a scale-by-scale fashion, followed by a more general profile analysis, and finally examined in terms of the implications for future research and training.

Self-appraised ineffective problem solvers tended to have higher elevations on F and lower scores on K. Since the average elevations on F of the self-appraised ineffective problem solvers is rather low (T = 60), the scores probably reflect their tendency to admit more readily to personal defects than the self-appraised effective problem solvers (T = 53). A mildly elevated K in college students is usually seen as

an indicator of psychological health. Thus the elevated K (T = 55) of the self-appraised effective problem solvers indicates that on the average they are claiming to be more socially comfortable and feel their lives are being better managed than the self-appraised ineffective problem solvers (T = 50). The self-appraised ineffective problem solvers had higher F minus K raw scores than the self-appraised effective problem solvers. When the F is elevated over K, the individual is often reporting that he/she has emotional problems, and cannot deal with these problems without help (Duckworth, 1979). Such a pattern suggests a willingness to turn problem-solving over to another person. In short, the validity scales are suggesting important differences about the personalities of these two groups of people; the self-appraised ineffective (as opposed to effective) problem solver resembles people who more readily acknowledge they want help in solving their emotional problems, and that their lives are not being managed well.

Differences were also found on the three hypothesized clinical scales (D, Pt, Sc) across levels of problem-solving appraisal; as a group, the self-appraised ineffective problem solvers had higher D, Pt, and Sc scores than the self-appraised effective problem solvers. Interpreting each scale individually, these results suggest that the self-appraised ineffective (as opposed to the effective) problem solver as a group tended to (a) report more dissatisfaction with life and have a somewhat lower self-concept (elevated D: Dahlstrom, Welsh, & Dahlstrom, 1975), (b) be more anxious, worry more, be unduly sensitive, and have low self-confidence (elevated Pt: Carson, 1969; Dahlstrom, Welsh, & Dahlstrom, 1972), (c) experience faulty coping mechanisms resulting in confusion and errors in perceiving the intentions and expectations of others (elevated Sc: Dahlstrom, Welsh, & Dahlstrom, 1975; Duckworth, 1979). Parenthetically, 67% of the self-appraised ineffective problem solvers had elevated Sc scores (scores over 60), while only 29% of the perceived effective problem solvers had elevated Sc scores. In addition, the self-appraised ineffective problem solvers scored higher on a more general index of psychological adjustment (i.e., the

sum of the clinical scales: Megargee, 1979). In short, the results on the clinical scales suggest that the self-appraised ineffective problem solvers are coping less effectively and are less well-adjusted psychologically.

The additional scales cast more light on the relationship between personality adjustment and one's self-appraisal as a problem solver. As predicted, the self-appraised effective (as opposed to ineffective) problem solvers scored lower on the A, Dy, Pr scales, and higher on the Es, Do, St, and Re scales. Interpreting each scale individually, these results suggest that the self-appraised effective (as opposed to ineffective) problem solver (a) tended to have fewer self-doubts and less difficulty in making decisions (low A scores: Block & Bailey, 1955; Sheriff & Boomer, 1954); (b) have more positive feelings of personal adequacy (elevated Es scores: Barron, 1953); (c) bounce back from problems without becoming debilitated by them (elevated Es scores: Duckworth, 1979); (d) have more positive expectations as a problem solver (higher Es minus A socres: Duckworth, 1979); (e) are less likely to ask for help or rely on others for decision making (low Dy scores: Navran, 1954); (f) feel they are able to take charge of their life, and have more poise, self-assurance, resourcefulness, and perseverence (elevated Do scores: Gough, McClosky, & Meehl, 1951); (g) are seen as socially responsible and have positions of leadership (elevated Re scores: Gough, 1952; Knapp, 1960; Olmstead & Monashesi, 1956); (h) are more tolerant of opinions and values different from their own as well as be less rigid in their thinking (low Pr scores: Duckworth, 1979; Gough, 1951); and (i) have confidence in themselves and have feelings of security (elevated St scores: Gough, 1948). Fifty-eight percent of the self-appraised effective problem solvers had a pattern of elevated Es, Do, St, Re, and lower A, Dy, and Pr scores, while only 12% of the perceived ineffective problem solvers had such a pattern of scores. Such a pattern appears to indicate an individual with high self-esteem, high self-confidence, and a corresponding high estimate of his/her ability to solve problems.

The individual scale-by-scale interpretations are supported by the results of

the profile analyses of the two psychologists. Based on the individual's MMPI profile, the psychologists' psychological adjustment ratings of the subjects significantly overlapped with the subjects' appraisal of their problem-solving skills. Thus, the linear analyses as well as the judges' ratings of the MMPI profiles strengthens the relationship between self-appraisal of one's problem-solving ability and psychological adjustment.

These results also have implications for problem-solving training and psychotherapy. Previous training in problem-solving has focused on enhancing specific skills, such as problem definition skills, brainstorming, and decision making (e.g., Dixon, Heppner, Petersen, & Ronning, 1979; D'Zurilla & Nezu, 1980; Nezu & D'Zurilla, 1979, 1981). While the emphasis on specific problem-solving skills seems justified, the results from this study would suggest that training self-appraised ineffective problem solvers (or other people with substantial problem-solving deficits) may require more than specific problem-solving skills training. For example, perhaps specific skill training in decision making will not substantially alter a person's problem-solving behaviors until specific negative cognitions about the person's self-concept, obsessive worrying patterns, or feelings of inadequacy are removed. Research is needed to examine the effect of problem-solving training, alone or in conjunction with other intervention strategies, on a range of treatment outcomes (e.g., problem-solving skills, problem-solving appraisal, self-concept). In addition, the utility of brief, one- or two-hour problem-solving training workshops for people with substantial problem-solving deficits may be quite limited. Probably more extensive and intensive intervention strategies will be needed to develop and maintain effective problem-solving behaviors, particularly for those individuals with well-engrained maladaptive psychological patterns.

In summary, the results suggest that those who perceive themselves as effective problem solvers also appear to be better adjusted psychologically. These results are correlational in nature, and cause and effect relationships cannot be made between

problem-solving and psychological adjustment; nonetheless, the results support a rather strong relationship between problem-solving appraisal and psychological adjustment. Whereas behavioral adjustment was previously linked to the ability to cope with problematic situations (Platt & Siegel, 1976), perhaps an equally important variable is the person's appraisal of their coping ability.

Footnotes

[1]The authors would like to express gratitude to Robert H. Dolliver, Theodore F. Henrichs, and Joseph T. Kunce for their helpful comments on an earlier draft of this paper, as well as to John F. McGowan for his assistance in rating the MMPI profiles of the subjects. Requests for reprints should be sent ot P. Paul Heppner, 210 McAlester Hall, Psychology Department, University of Missouri-Columbia, Columbia, Missouri 65211.

[2]Two additional scales were deleted, Lb and Ca, because they were developed to discriminate groups with low back pain and brain lesions. However, a 2 (PSI) X 2 (Sex) MANOVA conducted on all 11 scales resulted in the same MANOVA findings which utilized only the 9 scales.

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Table 1

A summary of the means and standard deviations by PSI and Sex for the validity, clinical, and additional scales.

	PSI					Sex				
	Low		High			Male		Female		
MMPI Scale	Mean	SD	Mean	SD	F	Mean	SD	Mean	SD	F
Validity Scales										
Unanswered Questions	1.4	8.4	0.0	0.0	1.03	1.5	8.6	0.0	0.0	.95
L	45.3	5.6	43.8	5.3	1.34	45.3	5.7	43.9	5.3	.91
F	53.4	6.7	59.6	7.8	12.15***	55.9	7.6	57.1	8.2	.08
K	54.8	7.3	50.0	9.7	5.14*	52.4	7.9	52.4	9.8	.06
F-K	-10.7	6.2	-5.6	7.3	11.01**	-8.1	6.7	-8.1	7.6	.60
Clinical Scales										
Hs	53.4	8.3	54.8	11.8	1.94	53.3	11.4	53.0	9.4	.07
D	47.6	7.8	57.9	12.6	17.66****	55.8	12.1	50.2	10.7	7.44**
Hy	55.6	5.7	57.9	8.2	1.61	56.8	6.4	56.7	7.7	.03
Pd	58.4	8.2	60.5	10.7	.73	58.6	10.7	60.2	8.5	.32
Mf	55.8	12.7	53.4	11.7	1.00	62.5	9.2	47.8	10.2	37.06***
Pa	57.9	9.3	58.6	9.6	.07	57.7	9.5	58.8	9.4	.19
Pt	55.5	6.9	65.1	10.6	19.76****	60.7	11.5	60.0	8.9	.65
Sc	57.2	7.0	65.9	12.9	11.76***	61.7	12.7	61.5	10.1	.18
Ma	65.4	11.6	61.6	11.4	1.74	63.2	12.5	63.8	10.9	.13
Si	44.3	6.5	55.3	10.0	27.50****	49.9	9.9	49.9	10.3	.32
Sum of Clinical Scales	449.0	32.7	482.3	61.9	7.47**	467.9	57.8	464.2	47.5	.35
Additional Scales										
A	44.8	8.2	56.3	11.5	22.95****	51.7	12.3	49.7	10.9	1.80
R	44.7	8.4	47.7	9.0	2.33	49.4	7.2	43.5	9.2	9.77**
Es	52.0	8.0	47.1	10.3	4.73*	49.4	8.4	49.6	10.4	.09
Dy	45.0	6.8	55.3	10.4	24.02****	50.5	10.6	49.9	9.9	.64
Do	60.0	7.2	50.5	9.1	22.24****	56.9	8.3	53.6	10.2	1.31
Re	50.4	8.4	44.8	7.8	8.24**	50.0	8.9	45.5	7.8	4.14*
Pr	45.2	8.2	51.6	10.6	7.66**	49.4	10.7	47.6	9.4	1.08
St	58.4	6.2	51.8	6.1	18.08****	55.5	7.3	54.7	7.1	.01
Cn	48.7	9.1	53.4	11.9	3.49	52.7	10.1	49.7	11.2	1.94
Do-Dy	15.0	12.3	-4.8	17.0	29.20****	6.4	17.3	3.7	18.5	.03
Es-A	7.2	14.3	-9.2	20.8	14.41***	-2.3	19.1	-0.1	20.2	.81

Note: PSI = Problem Solving Inventory; MMPI = Minnesota Multiphasic Personality Inventory

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$